41

Reconciliation

FOH Beg Inv.   0
FOH End Inv. (2,000 × 135)   270,000
  Income Increase   270,000
Variable Costing Income   1,230,000
Absorption Costing Income   1,500,000

$$BE = \frac{FC}{U.CM} = \frac{2,460,000}{615} = 4,000 \text{ Units}$$

Income Statement @ BE point (4,000 Units)
  Sales (4000 × 1000)   4,000,000
  VC   (4000 × 385)   1,540,000
  CM   4000 × 615   2,460,000
  FC   2,460,000
  Operating Income   0

Eg 9-21 Variable & Absorption Costing, Explaining Operating-Income
Month of April. Differences.

Variable Costing → Non GAAP Income Statement → Used for Internal
                                                                      Purposes.
Sales 350 × 24,000)   8,400,000
(VC) (350 × 13,000)   4,550,000
CM   (350 × 11,000)   3,850,000
(FC)   2,600,000
OI.   1,250,000

$$BE (Units) = \frac{FC}{UCM} = \frac{2,600,000}{11,000} = 236.$$

Absorption Costing
  DM
  DL   FOH = $\frac{2,000,000}{500}$ = $4000 Per Unit
  VOH

  10000 + 4000 = $14,000

Absorption Costing ⇒ GAAP Income Statement

Sales (350 × 24,000)		8,400,000
Less: COGS		
Beg. In	0	
COGM (500 × 14,000)	7,000,000	
COGAFS	7,000,000	
Less End In (150 × 14,000)	2,100,000	
COGS (350 × 14,000)		4,900,000
Gross Margin (350 × 10,000)		3,500,000
Less S&A Expenses		
V S&A Exp. (350 × 3000)	1,050,000	
F S&A Exp	600,000	
Total S&A Exp		1,650,000
Operating Income		1,850,000

Reconciliation

FOH Beg. Inv	0	
FOH End Inv (150 × 4000)	600,000	
Income Increase	600,000	⟵ because we did not expense End. Inv.
Variable Costing Income	1,250,000	
Absorption Costing Income	1,850,000	

Mid#2 Outlines ch. 6, 7, & 8

5 Problems

1 - ch. 6. Sales & Production Budget ⇒ ⟨Sales & Production⟩ and missing #s — over two months — Budget.

2-3-4-5 ch.7 & 8 Direct M ~~Standard~~ &

   2 DM Standard & Variances

   3 DL Standard & Variances

Ch. 08 { 4 - VOH Standards & Variances and Over & Underallocated
        { 5 - FOH Standards & Variances and Over & Underallocated

8 Multiple Choice Questions

Ch.7,8 (1,2,3,4 why favorable & Unfavorable. ⟨like paying more or less Using more hours or less⟩
        (What do Variances Mean? 5 Journal Entries.

ch 6,7 — (6-7)(8) Computations 6 - DM Variance - 7 DL Variance - 8 - PVV

(U) Unfavorable PVV will be added to COGS.

(F) favorable PVV will be subtracted from COGS

Month of May

Variable Costing

Sales (520 x 24,000)		12,480,000
(VC) (520x13,000)		6,760,000
CM 520 x 11,000		5,720,000
(FC)		2,600,000
O.I		$3,120,000

Cost behavior → Variable, Fixed, or Mixed

Absorption Costing

Sales (520 x 24,000)		12,480,000
Less COGS		
Beg. Inv. (150 x 14,000) 2,100,000		
COGM (400 x 14,000) 5,600,000		
COGAFS (550 x 14,000) 7,700,000		
Less End In. (20 x 14,000) (420,000)		
PVV adj (100 x 4000) 400,000		
Adj COGS		7,680,000
Gross Margin		4,800,000
Less S&A Expenses.		
V S&A Exp. (520x3,000) 1,560,000		
F S&A Exp 600,000		
Total S&A Exp 2,160,000		2,160,000
Operating Income		$2,640,000

Reconciliation

FOH Beg. Inv. (150 x 4,000)		(600,000)
FOH End Inv 30 x 4,000		120,000
Income Decrease		(480,000)
Variable Costing Income		3,120,00
Absorption Costing Income		$2,640,000

Right side column:

DM }
DL } 10,000
VOH

VS&A 3000

FOH = $2,000,000 / 500 Units = $4000

Manufacturing Cost: 10000 + 4000 = $14,000

Budgeted 500 Units
Actual 400 Units
Diff 100 Units
× 4000
PVV 400,000 (U) FOH

End In of Last Month (April)

Chapter 10 - Determining How Cost Behave

High-Low Method

	Patient Days	Maint. Costs
Hi June	8,000	9,800
Low March	5,000	7,400
Diff (or Change)	3,000	$2,400

$$VC = \frac{\text{Change In Cost}}{\text{Change In Activity}} = \frac{2,400}{3,000} = \$0.80 \text{ per Day}$$

FC = Total Cost - Variable Cost

June FC = $9,800 - 0.80(8000) = \$3,400$

March FC = $7,400 - 0.80(5000) = \$3,400$

$$\underset{\text{Mixed}}{Y} = \underset{\text{Fixed}}{a} + \underset{\substack{(\text{Volume} \cdot \text{per Activity}) \\ \text{Variable}}}{b \, x}$$

		FC		VC	
June	=	3,400	+	8000 (0.80)	= 9,800
March	=	3,400	+	5000 (0.80)	= 7,400
July	=	3,400	+	6200 (0.80)	= 8,360 Budgeted/Predicted

8,360 Budgeted/Predicted
7,800 Actual.
560 (F)

EX 10-27 Estimating a Cost Function, High-low Method.

	Trips	Cost Per Trip	Operating Cost $
High	2,000	300	600,000
Low	1,000	3,50	350,000
Diff	1,000		$250,000

$$VC = \frac{\text{Change in Cost}}{\text{Change in Activity}} = \frac{250,000}{1000 \text{ Trip}} = \$250. \text{ per Trip}$$

$$FC = \text{Total Cost} - \text{Variable Cost}$$

High$ $FC = 600,000 - 250(2000) = 100,000$

Low $FC = 350,000 - 250(1000) = 100,000$

$$y = a + bx$$

Hi $= 100,000 + 2000(250) = \$600,000$

Lo $= 100,000 + 1000(250) = \$350,000$

On Average 1,200 Trips.

$$y = 100,000 + 1,200(250) = 400,000$$

for 10 Helicopters

Budgeted $= 400,000 \times 10 = 4,000,000$

EX 10-23 Various Cost-behavior Patterns

2. B

3. G

4. J

5. I

6. L

7. F

8. K

9. e

(6)

Allocations — ch.15 - Service Cost
           — ch.16 - Joint Cost.

chapter 15

Service Cost → 3 methods — 1) Direct Method
  Allocation   2) Step Down Method
                              3) Reciprocal Method.

1) Direct Method

	Service			Production		
	Rec. Patients	Personnel	Adm. & Acct	Orthop.	Int. Medecine	Total
OH Costs	100,000	60,000	190,000			350,000
Allocat. Rec Patient	(100,000)			30%/100% 30,000	70%/100% 70,000	
Allocat. Personnel		(60,000)		25%/75% 20,000	50%/75% 40,000	
Allocat. Adm & Acct			(190,000)	35%/95% 70,000	60%/95% 120,000	
Total Allocation				120,000	230,000	350,000

2) Step Down Meth.

	Personnel	Adm & Acct	Rec. Patient	Orthop.	Int. Medecine	Total
OH Costs	60,000	190,000	100,000			350,000
Alloc. Personn.	(60,000)	20/100 12,000	5/100 3,000	25/100 15,000	90/100 30,000	
Allocat. Adm & Acct		(202,000)		35/95 74,421	60/95 127,579	
Allocate Rec Patient			(103,000)	30/100 30,900	70/100 72,100	
Total Allocation				120,321	229,679	350,000

EX 15-31) Support-Department Cost Allocations. Single-department Cost pools; direct, Step down, and Reciprocal Methods

Direct	A	B	X	Y	Total
Oh Cost	420,000	180,000			600,000
Alloc. A	(420,000)		$(\frac{10}{15})$ 262,500	$(\frac{5}{16})$ 157,500	
Alloc. B		(180,000)	$\frac{25}{100}$ 45,000	$\frac{75}{100}$ 135,000	
Total Alloc.			307,500	292,500	600,000

Step Down Meth.	A	B	X	Y	Total
Oh Costs	420,000	180,000			600,000
Alloc. A	(420,000)	$(\frac{4}{20})$ 84,000	$(\frac{10}{20})$ 210,000	$(\frac{6}{20})$ 126,000	
Alloc. B		(264,000)	$(\frac{25}{100})$ 66,000	$(\frac{75}{100})$ 198,000	
Total Alloc.			276,000	324,000	600,000

allocating A first

Step Down Meth.	A	B	X	Y	Total
Oh Costs	420,000	180,000			600,000
Alloc. B	$(\frac{150}{250})$ 108,000	(180,000)	$(\frac{25}{250})$ 18,000	$(\frac{75}{250})$ 54,000	
Alloc. A	528,000	0	$(\frac{10}{16})$ 330,000	$(\frac{6}{16})$ 198,000	
Total Alloc.			348,000	252,000	600,000

allocating B first

Chapter 16

Joint Cost Allocation
- Joint Cost
- Split off Point
- Separable Costs
- Byproducts

Spending	Production					end. Inv.
$900.	Milk: 1,000 qt → Sales Value $.55 per qt : $550					20%
To feed Cows per month	Cream: 500 qt → $.90 per qt : $450					20%

split-off Point	Milk	Cream	Total
A) Physical Measure	1000 qt	500 qt	1500 qt
1. Quarts	2/3	1/3	
2. Weighting			
3. Joint Cost Allocation	600	300	900

B) Sales Value @ Split off	Milk	Cream	Total
1. Sales Value	$550	$450	$1000
2. Weighting	55%	45%	
3. Joint Cost Allocation	$550/1000 $495	$450/1000 405	$900

Physical Measure Product Line Income Statement	Milk	Cream	Total
Sales (800 x .55) & (400 x .90)	440	360	800
COGM	600	300	900
Less End Inv. 20% (20% of COGM)	120 600 x 20%	60 300 x 20%	180
COGS	480	240	720
Gross Margin	(40)	120	80

Sales Value @ Split off point			
Sales	440	360	900
Less COGS			
COGM	495	405	900
Less End Inv. 20%	99	81	180
COGS	396	324	720
Gross Margin	44	36	80
Gross Margin %	10%	10%	

3

Spend more
to make →

$300 milk shakes 1,000 Qt Sales Value $1.80 per Qt   20%

$900

$200 ice cream 500 Qt $1.4   20%

c) Estimated NRV

	Milk Shake	Ice Cream	Total
1. Sales	1,800	700	2,500
2. Less Separable Cost	(300)	(200)	500)
3. NRV Net Relizable Value @ Split off	1,500 (1,800-300)	500 (700-200)	2,000
4. Weighting	3/4 75%	1/4 25%	
5. Joint Cost Allocation	675	225	$900

900 × 75% = 6...
900 × 25% = 22...

Product Line Income Statement

	Milk Shake	Ice Cream	Total
Sales (800×1.80) & (400×1.4)	1,440	560	2000
Less COGS.			
Joint Cost	675	225	900
Separable Cost	300	200	500
COGM.	975	425	1400
Less End In 20%	(195) 975×20%	85 425×20%	280
COGS	780	340	1,120
Gross Margin	660	220	880
Gross Margin %	45.8%	39.3%	44%

Ch.16 Joint Cost Allocation
  .a Physical Measure
  .b Sales Value @ Splitoff
  .c Estimated NRV
  .d Constant Gross Margin %

(B)

4

$300 M.S 1,000 qt Sales Value 1.Y per qt $1,800   end In. 20%

900 —<

$200 I.C 500 qt   1.4 $700   20%

Constband Gross Margin %

1)   M.S   IC   Total
a) Sales Value   1,800   700   2,500
b) Less Joint Cost   900
c) Less Separble cost 300   200   500
d) Gross Margin @ Sales Value   1,100
e) Gross Margin %   44%

2)
a) Sales Value   1,800   700   2,500
b) GM % (44%)   792   308   1,100
c) Cost of Good Sold 1,008   392   1,400
3) a) Less Sepo. Cost 300   200   500
   Joint Cost Allocation 708   192   900

                          M.S   IC   Total
Sales (800x1.8) & (400x1.4) 1,440   560   2,000
Less COGS
   Sep. Cost   300   200   500
   Joint Cost   708   192   900
COGAFS   1,008   392   1,400
Less End In (20%)   202   78   280
COGS   806   314   1,120
Gross Margin   634   246   880
Gross Margin %   44%   44%   44%

EX 16-24 Alternative Joint-cost-allocation Methods, Further-process Decision

Methanol   2,375. Gal. x $4 → Sepr Cost $9,500, Sales Value x $22 → $52,250

Joint Cost → $124,000   25%

95,000 Gal Turpentine. 7,125 Gal x $2 → Sepr Cost $14,250 Sales Value x 16 → $114,000
75%

a) Physical Measure Method.

	Methanol	Turpentine	Total
Physical Measure Gallons	2,375	7,125	95,000
Weighting	$\frac{1}{4}$ or 25%	$\frac{3}{4}$ or 75%	1
Joint Cost Allocation	31,000	93,000	124,000

b) Estimated NRV Method

	Methanol	Turpentine	Total
Sales Value	52,250	114,000	166,250
Less Sep. Costs	9,500	14,250	23,750
NRV @ split off	42,750	99,750	142,500
Weighting	30%	70%	100%
Joint Cost Allocation	37,200	86,800	124,000

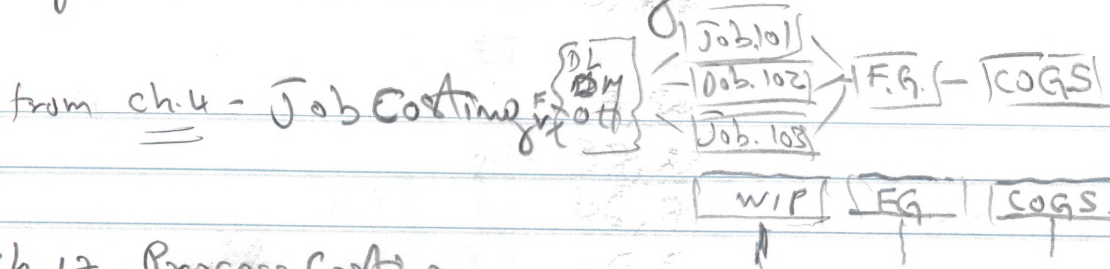Product Line Income Statement for Method "a" (Physical Measure M.

	Methanol	Turpentine	Total
Sales	52,250	114,000	166,250
Less COGS:			
Sep. Cost	(9,500	(14,250	23,750
Joint Cost	31,000	93,000	124,000
COGS	= (40,500	= (107,250	147,750
Gross Margin	11,750	6,750	18,500
Gross Margin %	22.5%	6%	11.1%

Product Line Income Statement Using Est. NRV Method

	Methanol	Turpentine	Total
Sales	52,250	114,000	166,250
Less COGS			
Sep. Cost	9,500	14,250	23,750
Joint Cost	37,200	86,800	124,000
COGS	46,700	101,050	147,750
Gross Margin	5,550	12,950	18,500
Gross Margin %	10.6%	11.4%	11.1%

Chap. 17 - Process Costing

from ch.4 - Job Costing
DL
DM
OH
→ Job 101 / Job 102 → F.G. - COGS
Job 103

| WIP | FG | COGS |

Ch. 17 - Process Costing

DM
DL
OH
→ Process 1 ↓ Process 2 ↓ Process 3 → FGI → KOGS

WIP1 WIP2 WIP3 F.G. COGS
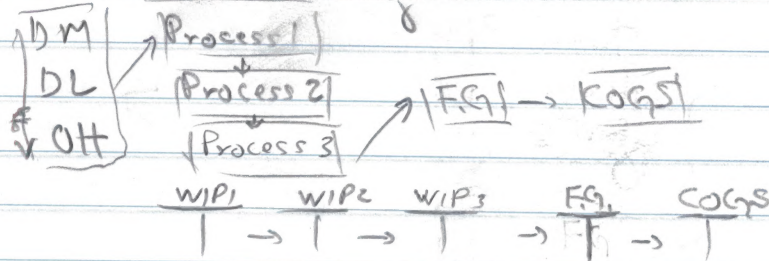
Barbie Ddl

Dept. A (Forming) DM @ beg. of Process.
Conversion Cost { DL throughout process.
OH throughout process
Transfer to

Dept. B (Finishing) DL throughout process.
OH throughout process
DM @ End of process.
Transfer to

Finished Goods

Beg Inv. + Units Started = Units Transferred + End. Inv.

Data: Units
WIP Beg. 100 DM 100%
CONV. 40%
Started 400
Complet. & Transf. 480
WIP End 20 DM 100%
CONV 50%

Data: Costs $
WIP Beg DM $4,000
CONV 1,110
Current DM $22,000
CONV $18,000

Weighted Average — Process 1   1) Physical Units   2) Equivalent Units
                                                        DM   Conv.

			DM	Conv
WIP Beg.	100			
Started	400			
	500			
Complete & Transf	480 100%		480.	480
WIP End	20	100%	20	50% 10
	500		500	490

equivalent whole Unit

Costs $	Total	DM	CONV	EWU
3) WIP Beg.	5,110	4,000	1,110	
Current	40,000	22,000	18,000	
Total Cost	45,110	26,000	19,110	

4) ÷ Equiv. Units   ÷ 500   ÷ 490
= Cost per Equiv. Unit   52   +   39.   =   91

5) Assignment of Cost
Complete & Transf   43,680   480 × 91
WIP End DM $1,040   20 × 52
    Conv $390   10 × 39.
    Total   1,430
Total Costs   45,110

Journal Entries for Process Costing
WIP A   22,000
    Materials Control   22,000

WIP A   18,000
    Wages Payable   6,000
    OH allocated   12,000
Assume OH allocated @ 200% of DL$
Let x = DL$ ⇒ 2x = OH$ ⇒ x + 2x = 18,000 ⇒ $x = \frac{18,000}{3}$ = 6,000
    ⇒ DL$ = $6,000 & OH$ = $12,000

	WIP A	
	5,110	
	22,000	Transf.
	18,000	43,680
	45,110	43,680
	1,430	

WIP B	43,680	
WIP A		43,680

FIFO Process!

Flow of Production	1) Physical Units	2) Equivalent Units	
		DM 100% Complet.	Conv. 40% Complet.
WIP Beg.	100		
Started	400		
	500		
Complet. & Transf.	480 100%	480	480
WIP End.	20	(100%) 20	(50%) 10
Work Done to Date	500	500	490
Less: Work Done on Beg. Inv.		100	40
Work Done this period only.		400	450

Costs $	Total	DM	Conv.	EWU
3) WIP Beg.	5,110	—	—	
Current	40,000	22,000	18,000	
Total	45,110			
4) ÷ Equiv. Units		÷ 400	÷ 450	
Costs Per Equiv. Units		55 +	40	= 95

5) Assignment of Costs

		Total	
WIP End.	D.M.	1,100	20x55
	Conv.	400	10x40
	Total	1,500	
Complet. & Transf. (Plug)		43,610	
Total		45,110	

6) Reconciliation.

WIP Beg.	5,110
Additional Costs to Complet.	
Conv. 60% × 100 × 40	2,400
Started & Completed	
400 - 20 = 380 → 380 × 95	36,600
Complet. & Transf.	43,610

Journal Entries

WIP B	43,610	
WIP A		43,610